sexual. These results were related to the duration of treatment in that only 2 patients of 28 (7%) who had fewer than 150 hours' treatment became heterosexual, whereas 18 of 38 (47%) patients who had 350 hours or more of analysis became heterosexual. Rosen (1964, p 293) has reported good results with psychotherapy in a series of exhibitionists.

There is a great need for further case series as well as individual studies in this field. As with many other activities to do with sex, so with psychotherapy of sexual deviation: there are many people practising it, but few of them report it to others – at least not systematically.

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Electric Aversion Therapy of Sexual Deviations

Many sexual deviants neither want treatment nor seek it, but many others ask for help because their deviation causes them personal or social distress. To what extent can they be helped by the psychiatrist? Woodward (1958) and Bieber *et al.* (1962), amongst others, have shown that it is possible to reorientate homosexuals with psychotherapy, but the treatment is time consuming and the success rate is low. More needs to be known about the natural history of these conditions before such treatments can be assessed. In any case, shorter and more available methods are still required, and it is important to find out to what extent behavioural techniques such as aversion therapy answer this need.

Aversion therapy aims to associate noxious stimuli with some aspect of the deviant behaviour or attitude. In earlier methods the noxious agents were chemical, e.g. apomorphine was used to produce nausea and vomiting. With this method Morgenstern *et al.* (1965) treated 13 transvestites; 7 were much improved and 5 showed some improvement. Recently electric aversion has largely supplanted chemical aversion as it is safer, easier to control, more precisely applied and less unpleasant. With electric aversion MacCulloch & Feldman (1967) reported 58% improvement in 43 homosexuals.

Together with Dr Michael Gelder, the present authors have so far used electric aversion in 40 male patients – 16 homosexuals, 3 pædophiliacs, 14 transvestites and transsexuals, 3 fetishists and 4 sadomasochists. This paper is a preliminary report of results to date. There is clearly a need for comparison with control groups of patients who are untreated or treated by other methods. Such a control group of homosexuals is at present being collected, but so far too few transvestites and other deviants have been available.

In the methods used, shocks were given to the forearm from a battery-operated shock box. The level of shock used was decided by the patient, who was asked to indicate a level which was unpleasant enough to remove any pleasure from the deviant situation, yet not so unpleasant as to make the treatment intolerable.

Shocks were associated with three different aspects of the deviant behaviour:

(1) *With the deviant act;* e.g. shocking the transvestite as he is cross-dressing.
(2) *With the deviant fantasy;* e.g. shocking the masochist as soon as he signals the presence of a masochistic fantasy in his mind.
(3) *With the erectile response* to deviant stimuli; e.g. shocking the homosexual as soon as he starts to develop an erection to a picture of an attractive male, or a fantasy of his homosexual behaviour. Erections were measured by means of a penis plethysmograph (Bancroft *et al.* 1966).

In transvestites and fetishists all three methods have been used. With sadomasochists and homosexuals only the last two methods have been possible. Most patients were treated for two to three weeks as inpatients. They had two aversion sessions daily to a total of 20–30 sessions. Ten homosexuals were treated as outpatients, having 2 to 3 sessions per week for three to four months to a total of 30–40 sessions. Three patients received supportive psychotherapy, one patient group psychotherapy and 5 marital counselling after aversion was completed.

Patients were necessarily highly motivated and co-operative; they had to participate actively to receive any shocks. Their results therefore are not

Table 1
Improvement at end of treatment and follow up

	Percentage of cases showing improvement at		
	End of treatment: Improved + much improved	*One year follow up:* ● *Much improved*	*Improved*
Homosexuals and pædophiliacs	72% (n=13)	10% (n=1)	40% (n=4)
Transvestites and fetishists	92% (n=11)	33% (n=4)	33% (n=4)
Transsexuals	80% (n=4)	0%	25% (n=1)
Sadomasochists	100% (n=4)	25% (n=1)	75% (n=3)

● Eight months mean follow up for sadomasochists

'Much improved' indicates reduction of deviant behaviour and interest to negligible level together with presence of normal heterosexual relationship

'Improved' indicates reduction in deviant behaviour and interest and/or increase in heterosexual interest, but still with need for further change

necessarily relevant to less motivated patients. All patients were followed up regularly except for 4 who did not return. These were assumed to be unimproved in the results.

The ideal clinical outcome in sexual deviations would be the absence of deviant behaviour and interest together with normal heterosexual relationships and suitable levels of confidence, self-esteem and well-being. However, patients will differ in the amount of change required to reach this goal, and it is not always necessary to reach this goal to make the treatment worth while. Table 1 shows an overall rating of improvement based upon detailed reports from the patient and his relatives.

Homosexuals and pædophiliacs: Fig 1A shows the mean change in homosexuality and heterosexuality for the group. The scales take into account both fantasied and overt behaviour (0–6). After treatment there was a sharp reduction in homosexuality and an increase in heterosexuality. These immediate gains diminished during follow up, though the heterosexual gains were more stable. The group has maintained some improvement in both areas after two years.

Results in the homosexuals are not as good as those reported by MacCulloch & Feldman (1967). Only one patient can be rated much improved, though half maintained worth-while improvement. Two patients are now having heterosexual intercourse who were not doing so before treatment. Increases in heterosexual interest occurred unexpectedly and often when homosexual interest was still present. Half the patients showed a marked increase in heterosexual fantasies during masturbation, but these sometimes diminished when unsuccessful attempts were made to establish heterosexual relationships. At this stage personality difficulties were particularly important.

Transvestites and fetishists: Fig 1B shows the changes in 12 transvestites and fetishists. Here the results were rather better. The reduction in deviant behaviour was greater despite a slight tendency to increase again with time. There was less increase in heterosexuality, but there was less room for improvement to start with. None of

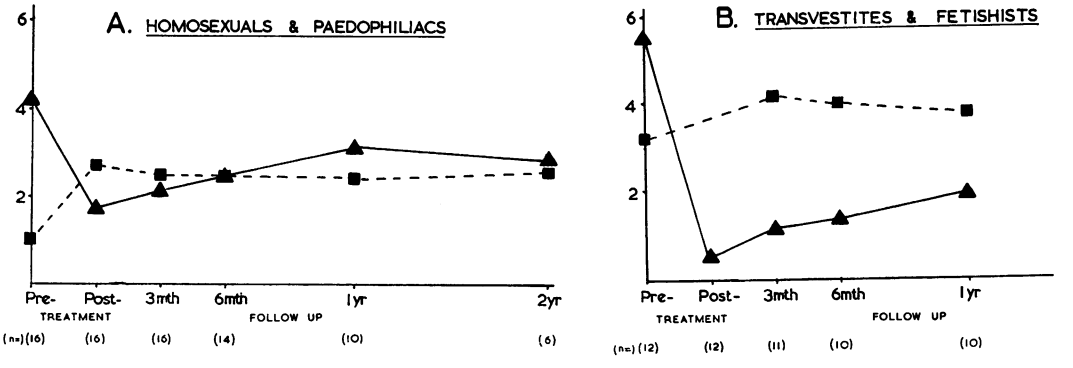

Fig 1 *Mean rating for groups before and after treatment.* A, *homosexuals and pædophiliacs.* B, *transvestites and fetishists.* ▲———▲, *deviant sexuality.* ■— — —■, *normal sexuality*

these patients showed any evidence of homosexuality. Three of the 12 were rated much improved after a year and 5 showed definite improvement.

Transsexuals: Transvestites with marked transsexual feelings have been considered separately because their results were less satisfactory. Only one of the 5 showed any lasting improvement.

Sadomasochists: This small group has so far done surprisingly well although it was originally feared aversion might make them worse. Four patients presented with sadomasochism as their main complaint, in 4 others it was secondary feature.

Of the 4 primary sadomasochists 3 showed complete absence of deviant fantasies after treatment, and in the other they were much reduced. However, the longest follow up so far is ten months and furthermore the deviance of these patients was not pronounced to start with. To date therefore, sadomasochism has responded well to aversion, but there is a definite need for caution. Although 2 cases with secondary sadomasochism also responded well in this regard, in the other 2 cases, both homosexual, electric shock was associated with an increase rather than a decrease of erections.

Marital relationships: Although in all our married patients the deviant behaviour started before their marriage, it is reasonable to expect that the deviation, or change in deviation, is likely to affect the dynamics of the marriage.

Fifteen of the patients were married, and 6 had reasonably stable heterosexual relationships at the time of treatment. The overall results in this group were no better than in the group with no heterosexual partners. Five of the marriages improved following treatment of the sexual deviation alone. In 2 transsexual patients their previously disturbed marriages remained disturbed after treatment, regardless of improvement in the deviant behaviour. These marriages improved to some extent after marital case-work was done. In one homosexual and 2 pædophiliacs improvement in their deviation after treatment was followed by increased marital disturbances, also helped by marital counselling. In 2 cases, the wives remained ambivalent despite successful treatment.

These events make it clear that aversion therapy, like any other psychiatric treatment, can only properly be given within the context of full psychiatric management. Proper attention must be given not only to the deviant behaviour but also to potential repercussions in the patient and his relatives.

Rarity of lasting conditional anxiety: The experimental literature on the use of noxious stimuli in animals would lead one to expect our patients to develop conditioned anxiety to their deviant situations after electric aversion. Such an effect has been very infrequent. One patient, a homosexual, did develop a convincing phobia of homosexuality which has remained now for two years. Several patients showed transient conditioned anxiety when handling the fetish object or imagining it, but this was short lived.

The most usual result of aversion is loss of interest in and loss of sexual arousal to the deviant behaviour. Patients usually remained able to think about or even carry out the deviant behaviour but experienced no excitement and might feel ridiculous instead. The reduction in deviant interest was always offset by an increase or maintenance of heterosexual feelings, except in 4 homosexual patients who remained heterosexually impotent after their deviant interest had been suppressed.

The problem of relapse is of obvious importance. When relapse occurred it was usually preceded by curiosity, by a wish to test out the treatment, by an increase in deviant fantasies or by a feeling of sexual frustration. Two homosexuals, frustrated by their inability to find a heterosexual partner, resorted to males who were more attainable. Twenty-two of the 40 patients carried out their deviant act at least once after treatment. In only 8 of these did this herald a return to the pretreatment state with the deviant behaviour being experienced as before treatment. In 5 cases the first relapse was followed by further episodes at a reduced frequency and usually with greatly reduced pleasure. In 9 cases the first relapse was not followed by further incidents. In most of these the act was much less enjoyable or felt ridiculous. In only 2 was it associated with anxiety which in fact terminated the behaviour.

One or two deviant acts after treatment, therefore, may not necessarily herald complete relapse or indicate the need for further treatment.

Emotional reactions to treatment: Patients varied greatly in their amount of anxiety and the stage at which this was experienced during treatment. Often the anxiety was not related to the strength of the shocks.

Patients sometimes felt aggressive during treatment especially during intensive treatment or when anxiety was high, but they never acted out this aggression. Reassurance usually helped them

cope with these feelings. On the whole patients tolerated aversion well and were able to continue normal activities between sessions. In only three instances was it necessary to stop a session because of the distress of the patient, and in no case was it necessary to abandon treatment for this reason. It is nevertheless important that the treatment should be carried out by an experienced therapist who can cope with the emotional reactions which may occur during treatment, both from the patient and from himself.

Depression also varied in its severity and timing in different patients. In some cases it was associated with an obvious fear of losing something important to them. Depression also occurred during follow up, but in those cases where this was marked there was a history of depressive illness before treatment.

Apart from such emotional reactions there was no evidence of new symptoms or new deviant behaviour in any patient. In one patient, a deviation which had not been treated became slightly more prominent. Two homosexuals whose homosexuality had been confined to fantasy before treatment experienced their first overt homosexuality after treatment.

Conclusions

Present results are preliminary and longer follow up is necessary before definite conclusions can be drawn. So far, however, 23 out of 40 cases (57%) of sexual deviation were improved by aversion therapy at a year's follow up, though only 6 cases (15%) were completely successful. Transvestites, fetishists and sadomasochists improved the most; results with homosexuals were less satisfactory and transsexuals did badly.

In some cases aversion therapy alone is sufficient to produce improvement not only in sexual behaviour, but also in personal adjustment and self-esteem. In most cases, however, aversion should form part of a more comprehensive therapeutic approach. Where the deviation depends on an abnormal sexual object or on a special way of relating to the sexual object (as in sadomasochism) then aversion is a quick and effective way of diminishing the deviation. Such diminution is often accompanied by an increase in normal heterosexual fantasies, but progression from normal fantasy to normal overt behaviour occurs much more slowly and less often. Here the personality of the patient is obviously important and other techniques may also be required, e.g. desensitization of heterosexual anxiety or psychotherapy. At the present time aversion techniques can be improved and much more needs to be known about the selection of suitable cases and the ways in which aversion can be most profitably combined with other treatment methods.

Finally, in addition to its clinical usefulness, aversion furthers our understanding of the conditions treated since it modifies specific aspects of behaviour and so clarifies the relationships between the deviant behaviour and other problems in the patient (Bancroft *et al.* 1966, Marks & Gelder 1967, Gelder & Marks 1968).

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Meeting January 9 1968

A debate was held on **Obscenity.** The main contributions were as follows:

The Overgrowth of Hypocrisy
Dr D Stafford Clark

The Law's Approach to the Question of Obscenity
Sir Norman Skelhorn (*Director of Public Prosecutions*)

Responsibility in a Free Society
The Rt Rev Dr John Robinson (*Bishop of Woolwich*)